

NAWTEC14 Speaker Abstract: Wasatch Integrated's Two Plant Enhancements in 2005; Designed with the Focus on Operations

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Wasatch Integrated Management District (WIMD) operates a municipal waste landfill and two 210 ton per day (tpd) municipal waste combustors (MWCs) in Layton, Utah. The MWCs export steam to Hill Air Force Base and use a back pressure turbine to generate electricity for onsite use and sale to the grid. In 2005, there were two major projects completed to improve the plant's effectiveness. This paper presents the unique designs of these two improvement projects and the experience learned in incorporating the operations tasks of running a remote landfill methane project and a state-of-the-art continuous emissions monitor (CEM) with minimal changes in the control room.

WIMD, in addition to operating the waste to energy facility, also operates a landfill 2 miles away. Steam produced at the waste-to-energy facility is sold to the nearby Hill Air Force Base. In February 2005, the Methane gas project came online which collects methane off the landfill. A landfill skid compresses the gas and ships the gas to Hill Air Force Base, where they use the gas to operate 2 Caterpillar generators to produce 1200 kilowatts of electrical power. This paper presents how the facility designed the system that brings all the landfill operating data to the facility operating system and the facility operators control the landfill methane project from a distance 2 miles away.

Also during 2005, Wasatch elected to upgrade the two existing CEMs monitoring the flue streams from their two waste-fed boilers. Acid gases, mercury, and dioxin/furan are controlled by injecting hydrated lime and activated carbon in a gas suspension absorber (GSA). Particulate emissions are controlled by a three-field electrostatic precipitator (ESP). The Title V operating permit contains requirements for minimum data availability of the CEM system. To be considered valid data, all CEM-generated data must meet the validation and data reduction criteria of the Utah Department of Air Quality and the Environmental Protection Agency (EPA) requirements of 40 CFR 60. This paper will also review the main points of WIMD's selection criteria, project schedule, system design, data presentation and reporting, maintenance and quality assurance plan (QAP), and certification results of that CEM measuring NO_x, SO₂, and O₂.